

WHAT IS CLAIMED IS:

1. A multi-leaf collimator comprising leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving body on one side and the plurality of leaf plates of said leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates, wherein:

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates along one direction by engaging with a gear portion provided respectively at each of said plurality of leaf plates, and driving force transmitting/cutoff device for transmitting driving force of said rotating device to said plurality of leaf plates at the same time during a certain period by moving said plurality of gear portions along the other direction across said one direction and engaging them with said rotating device and cutting off said driving force to a selected one of said plurality of leaf plates by disengaging said gear portion of said selected leaf plate with said rotating device.

2. A multi-leaf collimator comprising leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving body on one side and the plurality of leaf plates of said leaf plate driving body on the

other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates, wherein:

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates together along one direction during a certain period by engaging with a gear portion provided respectively at each of said plurality of leaf plates, and a plurality of engaging/disengaging devices provided in a one-to-one relation to the plurality of leaf plates for selectively engaging and disengaging a corresponding leaf plate with and from said rotating device by moving said gear portion of said corresponding leaf plate along the other direction across said one direction.

3. A multi-leaf collimator according to Claim 1, wherein each of said leaf plate driving bodies further comprises a holding device for abutting against the leaf plates to hold the leaf plates in stationary positions.

4. A medical system including an accelerator, the medical system comprising:

an accelerator; and

an irradiator having a collimator through which a radiation beam emitted from said accelerator passes, and irradiating the beam having passed said collimator, wherein:

said collimator comprises leaf plate driving bodies, each including a

plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving bodies being disposed in an opposing relation to form an irradiation field of the radiation beam between the opposing leaf plates,

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates along one direction by engaging with a gear portion provided respectively at each of said plurality of leaf plates, and driving force transmitting/cutoff device for transmitting driving force of said rotating device to said plurality of leaf plates at the same time during a certain period by moving said plurality of gear portions along the other direction across said one direction and engaging them with said rotating device and cutting off said driving force to a selected one of said plurality of leaf plates by disengaging said gear portion of said selected leaf plate with said rotating device.

5. A medical system including an accelerator, the medical system comprising:

an accelerator; and

an irradiator having a collimator through which a radiation beam emitted from said accelerator passes, and irradiating the beam having passed said collimator, wherein:

said collimator comprises leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the

other side, the plurality of leaf plates of said leaf plate driving bodies being disposed in an opposing relation to form an irradiation field of the radiation beam between the opposing leaf plates,

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates together along one direction during a certain period by engaging with a gear portion provided respectively at each of said plurality of leaf plates, and a plurality of engaging/disengaging devices provided in a one-to-one relation to the plurality of leaf plates for selectively engaging and disengaging a corresponding leaf plate with and from said rotating device by moving said gear portion of said corresponding leaf plate along the other direction across said one direction.

6. A medical system including an accelerator according to Claim 4, further comprising control device for controlling said rotating device and said transmitting/cutoff device.

7. A medical system including an accelerator according to Claim 5, further comprising control device for controlling said rotating device and said engaging/disengaging device.

8. A multi-leaf collimator according to Claim 2, wherein each of said leaf plate driving bodies further comprises a holding device for abutting against the

leaf plates to hold the leaf plates in stationary positions.

9. A multi-leaf collimator comprising leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving body on one side and the plurality of leaf plates of said leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates, wherein:

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates together along one direction during a certain period by engaging with a gear portion provided respectively at each of said plurality of leaf plates, a plurality of guide members provided in a one-to-one relation to the plurality of leaf plates for holding said leaf plate slidably along said one direction, and a guide member moving device for moving said guide member along the other direction across said one direction across said one direction for the purpose of engaging and disengaging said gear portion with and from said rotating device.

10. A multi-leaf collimator according to Claim 9, wherein each of said leaf plate driving bodies further comprise a holding device for abutting against the leaf plates to hold the leaf plates in stationary positions.

11. A multi-leaf collimator comprising leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving body on one side and the plurality of leaf plates of said leaf plate driving body on the other side being disposed in an opposing relation to form an irradiation field of a radiation beam between the opposing leaf plates, wherein:

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates together along one direction during a certain period by engaging with a gear portion provided respectively at each of said plurality of leaf plates,

each of said plurality of leaf plates provided at each of said leaf plate driving bodies comprises an expansion/contraction member for expanding and contracting along the other direction across said one direction for the purpose of engaging and disengaging said gear portion with and from said rotating device, and

said gear portion is disposed at said expansion/contraction member.

12. A multi-leaf collimator according to Claim 11, wherein each of said leaf plate driving bodies further comprises a holding device for abutting against the leaf plates to hold the leaf plates in stationary positions.

13. A medical system including an accelerator, the medical system comprising:

an accelerator; and

an irradiator having a collimator through which a radiation beam emitted from said accelerator passes, and irradiating the beam having passed said collimator, wherein:

said collimator comprises leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving bodies being disposed in an opposing relation to form an irradiation field of the radiation beam between the opposing leaf plates,

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates together along one direction during a certain period by engaging with a gear portion provided respectively at each of said plurality of leaf plates, a plurality of guide members provided in a one-to-one relation to the plurality of leaf plates for holding said leaf plate slidably along said one direction, and a guide member moving device for moving said guide member along the other direction across said one direction for the purpose of engaging and disengaging said gear portion with and from said rotating device.

14. A medical system including an accelerator according to Claim 13, further comprising control device for controlling said rotating device and said guide member moving device.

15. A medical system including an accelerator, the medical system comprising:

an accelerator; and

an irradiator having a collimator through which a radiation beam emitted from said accelerator passes, and irradiating the beam having passed said collimator, wherein:

said collimator comprises leaf plate driving bodies, each including a plurality of movable leaf plates and provided respectively on one side and the other side, the plurality of leaf plates of said leaf plate driving bodies being disposed in an opposing relation to form an irradiation field of the radiation beam between the opposing leaf plates,

each of said leaf plate driving bodies comprises one rotating device for moving said plurality of leaf plates together along one direction during a certain period by engaging with a gear portion provided respectively at each of said plurality of leaf plates,

each of said plurality of leaf plates provided at each of said leaf plate driving bodies comprises an expansion/contraction member for expanding and contracting along the other direction across said one direction for the purpose of



engaging and disengaging said gear portion with and from said rotating device,

and

said gear portion is disposed at said expansion/contraction member.